

WHAT IS CLAIMED IS:

1. An apparatus for producing a magnet roller, comprising:
a fixed mold having a cavity for forming a solid magnet body;
a movable mold disposed in the cavity, which is capable of increasing or decreasing a volume of the cavity in accordance with an injected amount of the melted resin-bonded magnet material composed primarily of magnetic powder and a binder; and
a magnetic field generator disposed around the fixed mold.
2. An apparatus for producing a magnet roller according to claim 1, wherein the movable mold moves in a lengthwise direction of the cavity against a biasing force provided by biasing means extending in the cavity.
3. An apparatus for producing a magnet roller according to claim 1, wherein the movable mold moves in a lengthwise direction of the cavity with a back pressure of 0.5 to 50 kg/cm² against a biasing force provided by biasing means extending in the cavity.
4. An apparatus for producing a magnet roller according to claim 1, wherein the movable mold moves in a lengthwise direction of the cavity against a biasing force provided

by biasing means extending in the cavity, the biasing means provided with force by a coil spring or an air cylinder.

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5. A method for producing a magnet roller in which a resin-bonded magnet material, which is composed primarily of magnetic powder and a binder, is injected into a cavity of a metal mold while applying a magnetic field thereto,

wherein a fixed mold having a cavity for forming a solid magnet body and a movable mold disposed in the cavity and capable of increasing or decreasing a volume of the cavity are used as the metal mold; and

while injecting a melted resin-bonded magnet material into the cavity, the movable mold is moved such that the volume of the cavity is increased in accordance with the injected amount of the melted resin-bonded magnet material, and a magnet body molded within the cavity is magnetized by a magnetic field generator disposed around the fixed mold.

6. A method for producing a magnet roller according to claim 5,

wherein the movable mold moves in a lengthwise direction of the cavity against a biasing force provided by biasing means extending in the cavity.

7. A method for producing a magnet roller according to claim 5, wherein the movable mold moves in a lengthwise direction of the cavity with a back pressure of 0.5 to 50 kg/cm² against a biasing force provided by biasing means extending in the cavity.

8. A method for producing a magnet roller according to claim 5, wherein a surface roughness of the magnet roller is 20 mm or less based on Japanese Industry Standard (JIS) 10-point average roughness scale R_z , and when magnetic force is measured at intervals of 1 mm in a direction parallel to axial direction, a difference in magnetic force between adjacent points is 10 gauss or less.